

STRUCTURAL GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02 ICD-1-82 REVISED 07-19-02
 PCB-91 REVISED 07-19-02 SBR-1-99 REVISED 07-19-02
 PSID-1-99 REVISED 09-07-99

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS20-44 AND ALTERNATE MILITARY LOADING
 FUTURE WEARING SURFACE (FWS) OF 60 P.S.F.

DESIGN DATA:

CONCRETE:

CLASS HP CONCRETE - COMPRESSIVE STRENGTH
 4500 P.S.I. (SUPERSTRUCTURE)

CLASS HP CONCRETE - COMPRESSIVE STRENGTH
 4000 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL:

ASTM A615 OR A996, GRADE 60, MINIMUM YIELD
 STRENGTH 60,000 P.S.I.

STRUCTURAL STEEL:

ASTM A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

CONCRETE FOR PRESTRESSED BEAMS:

COMPRESSIVE STRENGTH (FINAL) - 7000 P.S.I.
 COMPRESSIVE STRENGTH (RELEASE) - 5000 P.S.I.

PRESTRESSING STRAND:

AREA = 0.153 SQ. IN.
 ULTIMATE STRENGTH = 270 K.S.I.
 INITIAL STRESS = 202.5 K.S.I. (LOW RELAXATION STRAND)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2 1/2" CONCRETE COVER (TOP MAT)

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES,
 TO BE 1" THICK.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

PORTABLE CONCRETE BARRIER

FURNISHING, INSTALLING, MAINTAINING AND REMOVING PORTABLE BARRIER ON THE BRIDGE SHALL BE INCLUDED IN ITEM 614 OF THE ROADWAY QUANTITIES FOR PAYMENT.

DRUMS

FURNISHING, INSTALLING, MAINTAINING AND REMOVING DRUMS ON THE BRIDGE SHALL BE INCLUDED IN ITEM 614 OF THE ROADWAY QUANTITIES FOR PAYMENT.

APPROACH SLAB REMOVED, AS PER PLAN

THIS WORK CONSISTS OF THE REMOVAL OF APPROACH SLABS, INCLUDING PARAPETS, PRESSURE RELIEF JOINTS, AND SLEEPER SLABS.

SEALING OF CONCRETE SURFACES

THE COLOR OF THE CONCRETE SEALER FOR PARAPETS, ABUTMENTS SHALL BE FEDERAL COLOR NO. 595B-27722.

ITEM 203 EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT. REFER TO ROADWAY QUANTITIES FOR ADDITIONAL NOTES AND PAYMENT.

SEQUENCE OF CONSTRUCTION/PROPOSED WORK

STAGE 1 CONSTRUCTION

PHASE B

1. INSTALL STAGE B M.O.T. PER PLANS.
2. INSTALL PHASE B TEMPORARY SHORING.
3. REMOVE PHASE B PORTION OF EXISTING BRIDGE DECK, ABUTMENT, INTERMEDIATE DIAPHRAGMS, APPROACH SLABS, AND MEDIAN WALLS.
4. CONSTRUCT PHASE B PORTION OF ABUTMENT.
5. ERECT BEAM 1 AND CONSTRUCT INTERMEDIATE DIAPHRAGM.
6. CONSTRUCT PHASE B PORTION OF ABUTMENT DIAPHRAGM.
7. CONSTRUCT PHASE B PORTION OF BRIDGE DECK AND MEDIAN PARAPET.
8. CONSTRUCT PHASE B PORTION OF APPROACH SLABS AND MEDIAN PARAPET.
9. REMOVE PHASE B TEMPORARY SHORING AND M.O.T.

PHASE C

10. INSTALL PHASE C M.O.T. PER PLANS.
11. INSTALL PHASE C TEMPORARY SHORING.
12. REMOVE PHASE C PORTION OF EXISTING BRIDGE DECK, ABUTMENT, INTERMEDIATE DIAPHRAGMS, APPROACH SLABS, AND MEDIAN WALLS.
13. CONSTRUCT PHASE C PORTION OF ABUTMENT.
14. ERECT BEAM 2 AND CONSTRUCT INTERMEDIATE DIAPHRAGM.
15. CONSTRUCT PHASE C PORTION OF ABUTMENT DIAPHRAGM.
16. CONSTRUCT PHASE C PORTION OF BRIDGE DECK AND PARAPETS.
17. CONSTRUCT PHASE C PORTION OF APPROACH SLABS AND PARAPETS.
18. REMOVE PHASE C TEMPORARY SHORING AND M.O.T.

PHASE D

19. INSTALL PHASE D M.O.T. PER PLANS.
20. REMOVE PHASE D PORTION OF EXISTING BRIDGE DECK AND APPROACH SLABS.
21. CONSTRUCT PHASE D PORTION OF BRIDGE DECK AND PARAPET.
22. CONSTRUCT PHASE D PORTION OF APPROACH SLAB AND PARAPET.

OTHER WORK TO BE COORDINATED WITH THE OVERALL SEQUENCE

1. REPAIR PATCH SUBSTRUCTURE UNITS AS MARKED IN THE FIELD.
2. SEAL ALL EXPOSED CONCRETE SURFACES OF ABUTMENTS, PARAPETS, ETC. WITH EPOXY-URETHANE SEALER.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESCRIPTION

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING PARAPETS AND OTHER APPURTENANCES FROM PRESTRESSED CONCRETE SUPPORTING SYSTEMS. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND*OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF PRESTRESSED CONCRETE SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY PRESTRESSED CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK AND DIAPHRAGMS ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE EDGES OF THOSE MEMBERS. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING PRESTRESSED CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR PRESTRESSED CONCRETE MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (CONT.)

AFTER THE DECK HAS BEEN REMOVED, THE BEAMS SHALL BE INSPECTED, FOR CRACKS AND/OR DAMAGE, BY THE ENGINEER. IF REPAIRS ARE DEEMED NECESSARY, THE CONTRACTOR SHALL SUBMIT REPAIR RECOMMENDATIONS TO THE ENGINEER FOR APPROVAL.

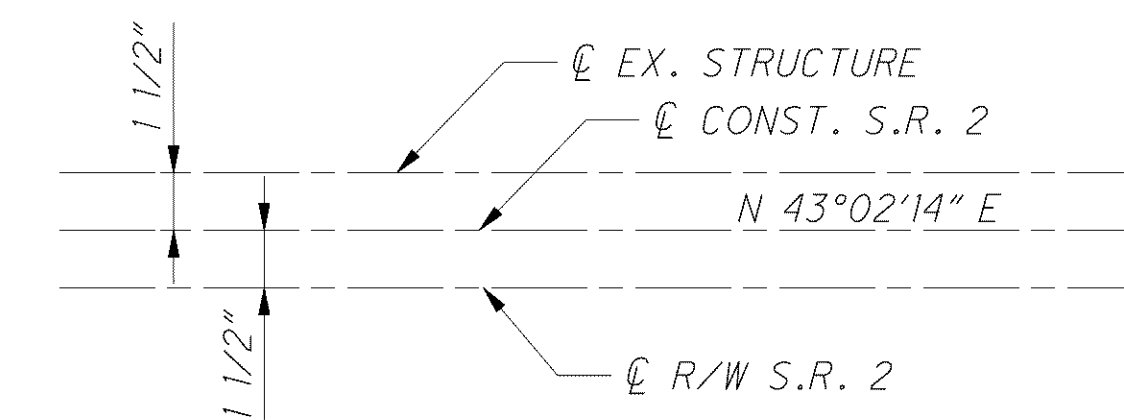
REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS FOR REMOVALS OVER STRUCTURAL MEMBERS PRESTRESSED I-BEAM, THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS E.G., FINISHING MACHINE, FORM SUPPORTS, ETC. TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

DECK REMOVALS - COMPOSITE DECK DESIGNS - PRESTRESSED SUPERSTRUCTURES: DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE PRESTRESSED BEAM FLANGES, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE ENGINEER AT LEAST 7 DAYS BEFORE CONSTRUCTION BEGINS. DEPARTMENT ACCEPTANCE IS REQUIRED. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE PRESTRESSED BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR PRESTRESSED MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED OVER 20 FOOT SPAN, AS PER PLAN.



CENTER LINE DIAGRAM

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DESIGN AGENCY ARCADIS ARCADIS U.S., Inc. 100 Superior Avenue, Suite 1250 Cleveland, Ohio 44114 Tel: 216-781-6177 Fax: 216-781-6243 www.arcadis-us.com		DATE 12/07
REVIEWED CMD/F/JG	STRUCTURE FILE NUMBER 43000912(L) 43000920(R)	
DRAWN TMR	CHECKED RBB	
STRUCTURAL GENERAL NOTES		
BRIDGE NO. LAK-2-0760 L&R STATE ROUTE 2 OVER NEWELL CREEK		
LAK-2-3.32 PID 13486		
3 / 25		
1596 1679		